FIG.1

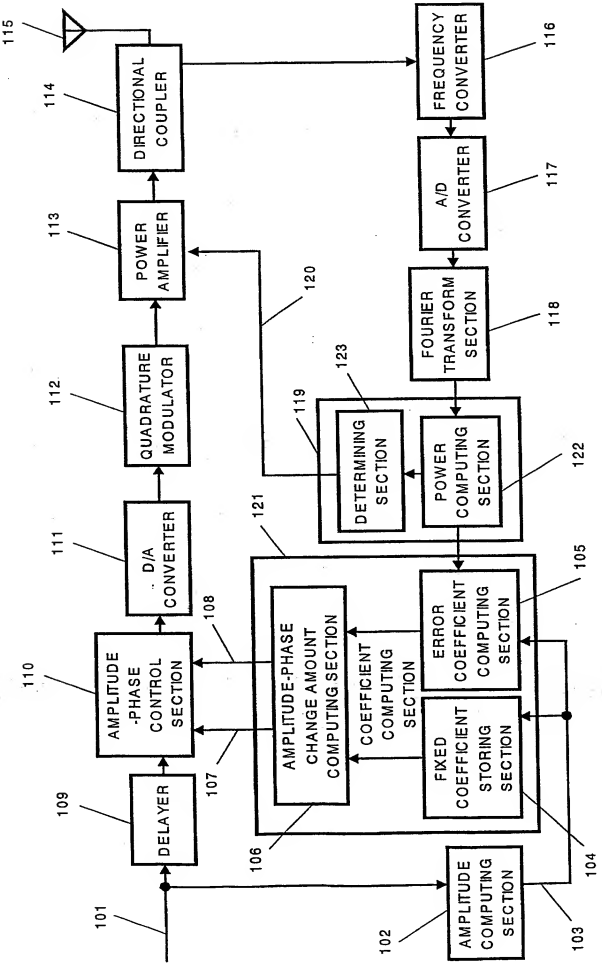

101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
AMPLITUDE COMPUTING SECTION
DELAYER
AMPLITUDE -PHASE CONTROL SECTION
D/A CONVERTER
QUADRATURE MODULATOR
POWER AMPLIFIER
DIRECTIONAL COUPLER
FREQUENCY CONVERTER
A/D CONVERTER
FOURIER TRANSFORM SECTION
DETERMINING SECTION
POWER COMPUTING SECTION
AMPLITUDE-PHASE CHANGE AMOUNT COMPUTING SECTION
COEFFICIENT COMPUTING SECTION
ERROR COEFFICIENT COMPUTING SECTION
FIXED COEFFICIENT STORING SECTION

FIG.2

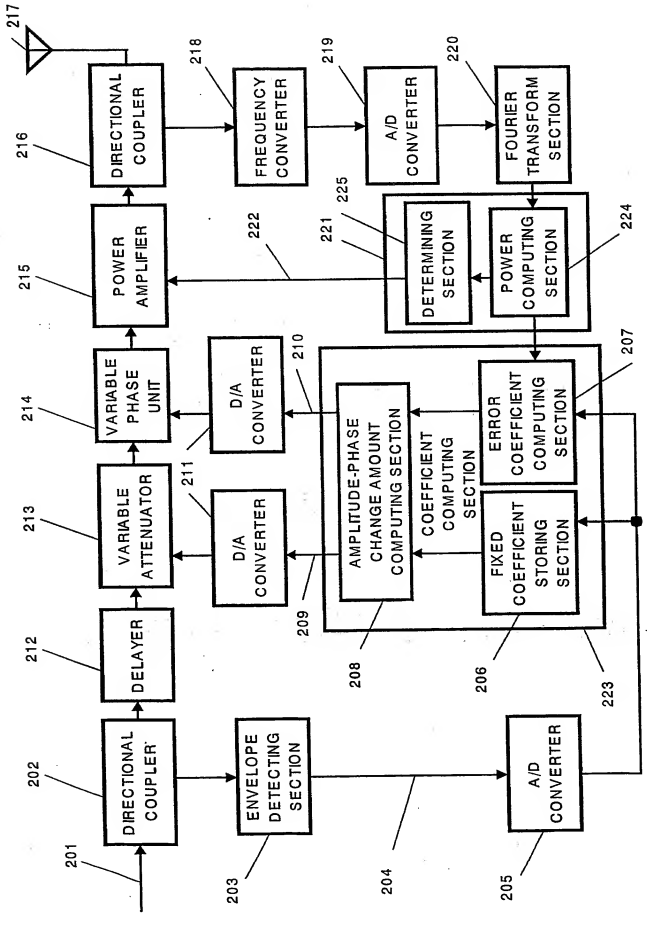

201
DIRECTIONAL COUPLER
202
ENVELOPE DETECTING SECTION
203
204
A/D CONVERTER
205
DELAYER
212
VARIABLE ATTENUATOR
213
VARIABLE PHASE UNIT
214
POWER AMPLIFIER
215
DIRECTIONAL COUPLER
216
217
FREQUENCY CONVERTER
218
A/D CONVERTER
219
FOURIER TRANSFORM SECTION
220
222
DETERMINING SECTION
221
225
POWER COMPUTING SECTION
224
D/A CONVERTER
210
D/A CONVERTER
211
AMPLITUDE-PHASE CHANGE AMOUNT COMPUTING SECTION
208
COEFFICIENT COMPUTING SECTION
209
ERROR COEFFICIENT COMPUTING SECTION
207
FIXED COEFFICIENT STORING SECTION
206
223

FIG.3

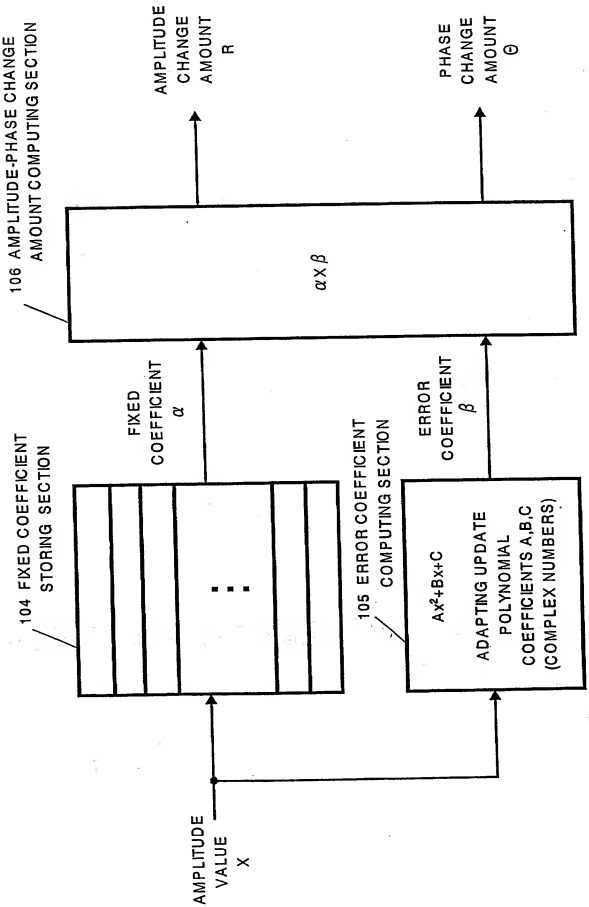

AMPLITUDE VALUE X
104 FIXED COEFFICIENT STORING SECTION
FIXED COEFFICIENT α
105 ERROR COEFFICIENT COMPUTING SECTION
Ax²+Bx+C
ADAPTING UPDATE POLYNOMIAL COEFFICIENTS A,B,C (COMPLEX NUMBERS)
ERROR COEFFICIENT β
106 AMPLITUDE-PHASE CHANGE AMOUNT COMPUTING SECTION
α×β
AMPLITUDE CHANGE AMOUNT R
PHASE CHANGE AMOUNT Θ

FIG.4

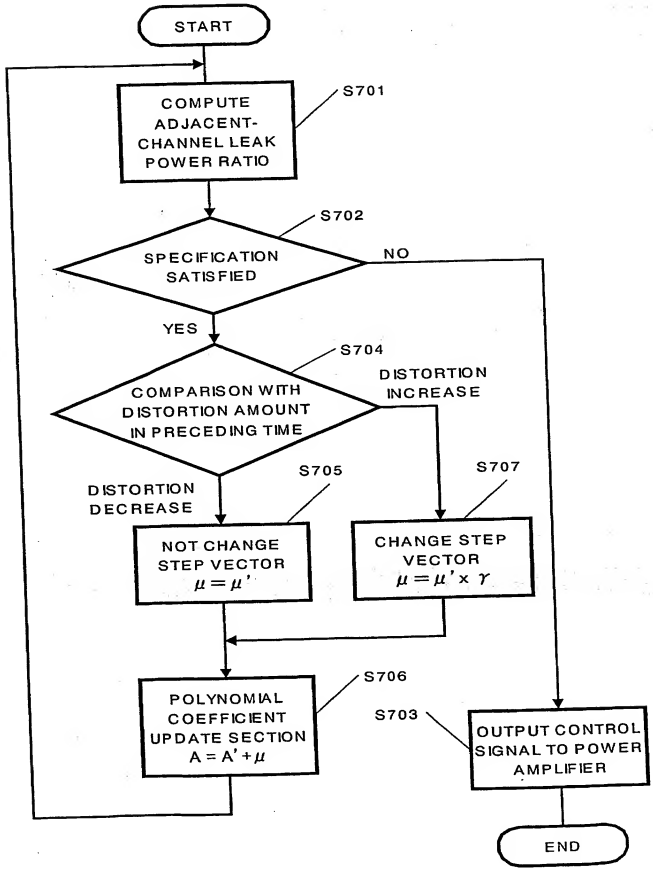

START
COMPUTE ADJACENT-CHANNEL LEAK POWER RATIO
S701
S702
SPECIFICATION SATISFIED
NO
YES
S704
COMPARISON WITH DISTORTION AMOUNT IN PRECEDING TIME
DISTORTION INCREASE
DISTORTION DECREASE
S705
S707
NOT CHANGE STEP VECTOR $\mu = \mu'$
CHANGE STEP VECTOR $\mu = \mu' \times \gamma$
S706
POLYNOMIAL COEFFICIENT UPDATE SECTION $A = A' + \mu$
S703
OUTPUT CONTROL SIGNAL TO POWER AMPLIFIER
END

FIG.5

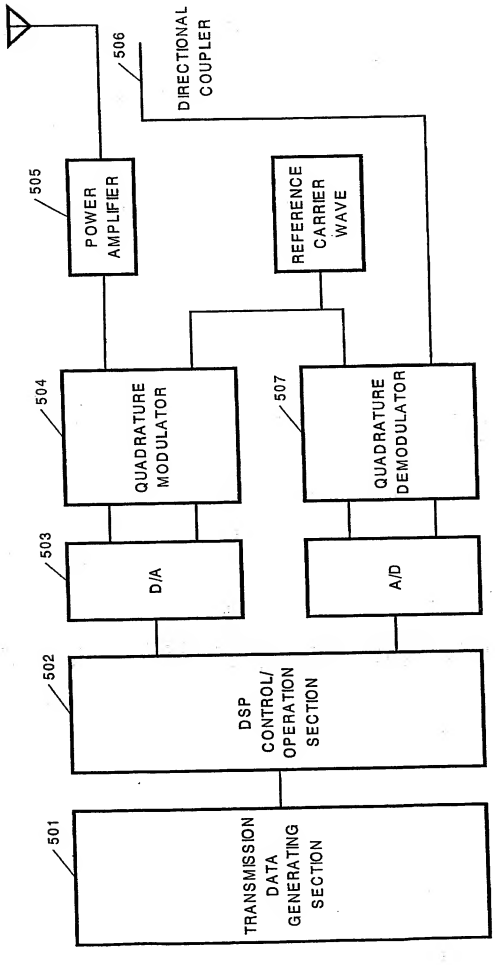
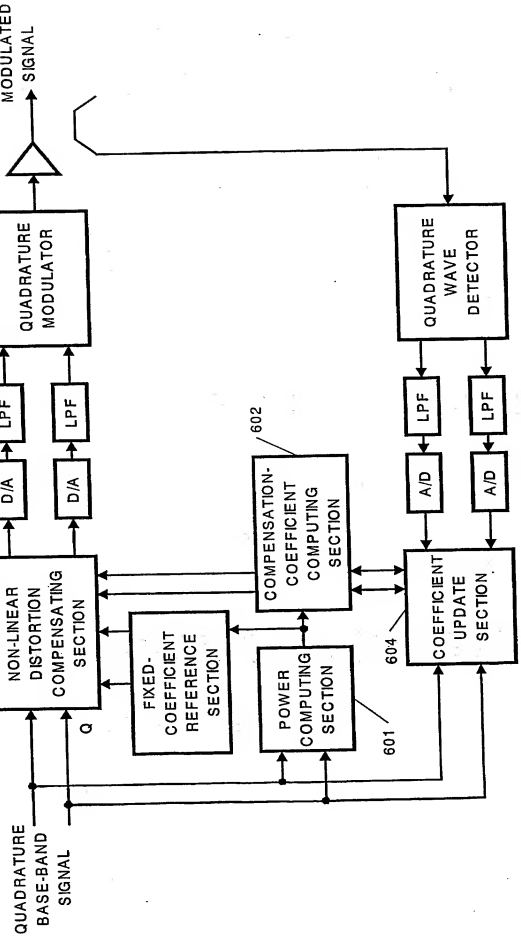

501
TRANSMISSION DATA GENERATING SECTION
502
DSP CONTROL/ OPERATION SECTION
503
D/A
A/D
504
QUADRATURE MODULATOR
507
QUADRATURE DEMODULATOR
505
POWER AMPLIFIER
REFERENCE CARRIER WAVE
506
DIRECTIONAL COUPLER

FIG.6


MODULATED SIGNAL
QUADRATURE MODULATOR
LPF
LPF
D/A
D/A
NON-LINEAR DISTORTION COMPENSATING SECTION
603
FIXED-COEFFICIENT REFERENCE SECTION
POWER COMPUTING SECTION
601
COMPENSATION-COEFFICIENT COMPUTING SECTION
602
COEFFICIENT UPDATE SECTION
604
A/D
A/D
LPF
LPF
QUADRATURE WAVE DETECTOR
I
Q
QUADRATURE BASE-BAND SIGNAL

LIST OF DRAWING REFERENCE NUMBERS

101 TRANSMISSION BASE-BAND SIGNAL

102 AMPLITUDE COMPUTING SECTION

103 AMPLITUDE VALUE

104 FIXED COEFFICIENT STORING SECTION

105 ERROR COEFFICIENT COMPUTING SECTION

106 AMPLITUDE-PHASE CHANGE AMOUNT COMPUTING SECTION

107 AMPLITUDE CHANGE AMOUNT

108 PHASE CHANGE AMOUNT

109 DELAYER

110 AMPLITUDE-PHASE CONTROL SECTION

111 D/A CONVERTER

112 QUADRATURE MODULATOR

113 POWER AMPLIFIER

114 DIRECTIONAL COUPLER

115 ANTENNA

116 FREQUENCY CONVERTER

117 A/D CONVERTER

118 FOURIER TRANSFORM SECTION

119 OUT-BAND POWER COMPUTING SECTION

120 CONTROL SIGNAL

121 COEFFICIENT COMPUTING SECTION

122 POWER COMPUTING SECTION

123 DETERMINING SECTION

201 TRANSMISSION RF SIGNAL

202 DIRECTIONAL COUPLER

203 ENVELOPE DETECTING SECTION

204 AMPLITUDE VALUE

205 A/D CONVERTER

206 FIXED COEFFICIENT STORING SECTION

207 ERROR COEFFICIENT COMPUTING SECTION

208 AMPLITUDE-PHASE CHANGE AMOUNT COMPUTING SECTION

209 AMPLITUDE CHANGE AMOUNT

210 PHASE CHANGE AMOUNT

211 D/A CONVERTER

212 DELAYER

213 VARIABLE ATTENUATOR

214 VARIABLE PHASE UNIT

215 POWER AMPLIFIER

216 DIRECTIONAL COUPLER

217 ANTENNA

218 FREQUENCY CONVERTER

219 A/D CONVERTER

220 FOURIER TRANSFORM SECTION

221 OUT-BAND POWER COMPUTING SECTION

222 CONTROL SIGNAL

223 COEFFICIENT COMPUTING SECTION

224 POWER COMPUTING SECTION

225 DETERMINING SECTION

501 TRANSMISSION DATA GENERATING SECTION

502 DSP CONTROL/OPERATION SECTION

503 D/A CONVERTER

504 QUADRATURE MODULATOR

504 POWER AMPLIFIER

505 DIRECTIONAL COUPLER

506 QUADRATURE DEMODULATOR

601 POWER COMPUTING SECTION

602 COMPENSATION-COEFFICIENT COMPUTING SECTION

603 NON-LINEAR DISTORTION COMPENSATING SECTION

604 COEFFICIENT UPDATE SECTION